

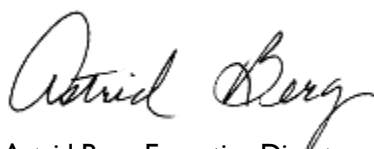
When You Can't Breathe, Nothing Else Matters®

Breathing

≠ AMERICAN LUNG ASSOCIATION®
of Washington

State of the Air in Washington 2003

The average American breathes 3,400 gallons of air each day. That's what keeps us alive. Yet, unhealthy air can also be deadly. It contributes to serious health problems such as cancer, heart disease, asthma, chronic bronchitis and emphysema. At the American Lung Association of Washington, our mission is to assure lung health for the people of our state. We do that by fighting bad air, tobacco use and the asthma epidemic. One key part of our effort is public education. That is why we have written this State of the Air in Washington 2003 Report. We worked with air quality experts to identify the biggest air pollution problems in our state, and we recognize where we have made real progress. At the end, you will find our recommendations for making the air, both outdoors and indoors, safer to breathe.



Astrid Berg, Executive Director, American Lung Association of Washington



Publication of this report was made possible through the generous support of Puget Sound Energy





See pages 4-7 for a discussion of key air quality issues in these four areas of the state.

State Summary

The air in Washington is cleaner than it was 20 years ago. However, the remaining air pollution problems in the state will be more difficult to solve because the sources are not easily identifiable industrial smokestacks, but the everyday activities of six million Washington residents. The state Department of Ecology's Air Quality Program Manager, Mary Burg, says, "The largest air quality challenges remaining in Washington come from the choices individuals make."

The statistics show the progress we've made. In 1980 Seattle had just 73 days where the air quality was listed as good. Last year, Seattle had 270 days listed as good air quality days. Such success stories are evident all across the



state. Washington once had 14 areas out of attainment with federal air pollution rules. Thirteen of them now meet federal air quality standards.

Washington still faces some serious air quality challenges. The American Lung Association of Washington is particularly concerned about two pollution categories — air toxics and fine particles — that we feel need attention in order to assure lung health and improve air quality in our state.

Toxic Air Pollutants

Millions of pounds of toxic chemicals are released into Washington's air every year. These chemicals can cause cancer, birth



defects and other serious health problems. The biggest source in Washington is diesel exhaust. Two other key sources of air toxics are wood smoke and gasoline vapors.

Experts are just starting to appreciate how dangerous these chemicals are. Toxic air pollutants account for an additional 700 cases of cancer for every million Washington residents.

Fine Particle Pollution from Smoke and Diesel Exhaust

Particulate matter is the general term used for a mixture of solid particles and liquid droplets found in the air. They may be emitted directly by a source such as vehicles, factories, construction sites, unpaved roads, stone crushing and wood burning, or formed in the atmosphere when gases from burning fuels react with sunlight and water vapor.

Particulate matter includes both fine and coarse particles. The fine particles, less than 2.5 microns in diameter, are now the biggest concern in our state.

Particles are present everywhere, but high concentrations of particles have been found to present a serious danger to human health. Fine-particle pollution is associated with cancer, heart disease and lung diseases. The



primary source is diesel engine exhaust. Smoke from fireplaces, wood stoves and outdoor fires is also a major contributor.

Washington does have some significant success stories to report. Carbon monoxide violations were once fairly common here. Now, thanks to cleaner cars and cleaner fuel, this pollution problem has become much less prevalent in Washington.

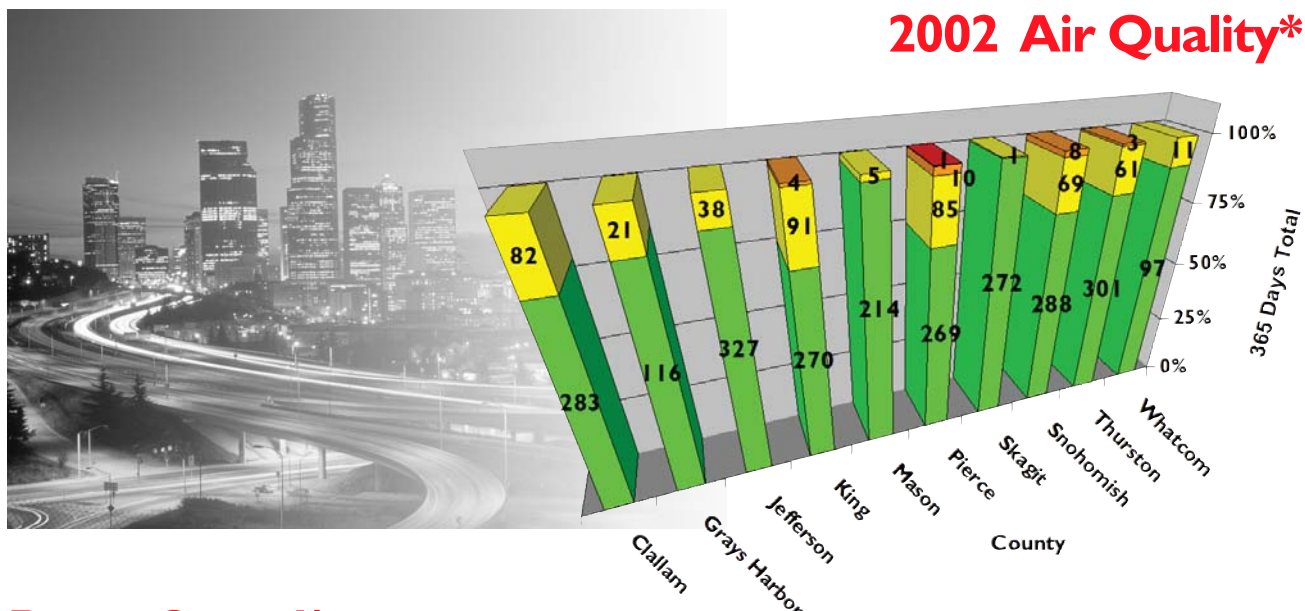
Ozone, the main ingredient in smog, is still a major challenge in other parts of the country — but here in our state, special blends of gasoline, gasoline vapor-recovery systems, industrial controls, improved vehicle technology and favorable air circulation patterns have helped keep ozone levels relatively low. However, because more people are driving more miles every year, we are still very

close to violating the ozone standard every summer in parts of our state, and we still need citizen cooperation when air agencies issue calls to action (Clean Air Action Days, burn bans or Smog Watches).



For more information

Washington State Department of Ecology
<http://www.ecy.wa.gov/programs/air/airhome.html>



Puget Sound/ Western Washington

You can sum up the primary air-quality challenge around Puget Sound with one word: people. The state's most populous region has more cars, more buses, more heavy equipment and more fireplaces than anywhere else in Washington. It takes a toll.

A major source of unhealthy air in the Puget Sound basin is fine-particle pollution known as PM 2.5. In the winter, chimney smoke causes 60 percent of these particles. In the summer, the primary source is outdoor burning. During all seasons, another leading cause of fine-particle pollution is diesel exhaust.

Diesel exhaust and smoke are also the primary sources of toxics — another concern for public health. According to 2002 studies, Seattle ranked in the top 5 percent of cities nationwide with the worst

air-toxics emissions, which increases the risk of cancer. By far the biggest source of this risk is diesel exhaust. This is another reason why cleaning up diesel engines is a top priority for local air managers.

There is good news to report. The Puget Sound area leads the state in retrofitting diesel engines and using ultra-low sulfur diesel fuel. This combination makes diesel engines up to 90 percent cleaner. Buses and trucks in King, Snohomish, Pierce, Kitsap, Skagit and Whatcom counties are benefiting from that cleanup.

Overall, Puget Sound's air is cleaner than it was 20 years ago. We haven't had a violation of the federal ozone standard since 1994. In the northwestern region (Skagit,

Island and Whatcom counties), no violation of standards has ever occurred. Cleaner cars and an active emissions inspection program are making a difference. Still, more than half the area's pollution comes from cars, trucks and buses. Around Puget Sound, these vehicles travel 89 million miles each day. That figure keeps going up every year. Preserving the progress we've made will be a real challenge.

For more information

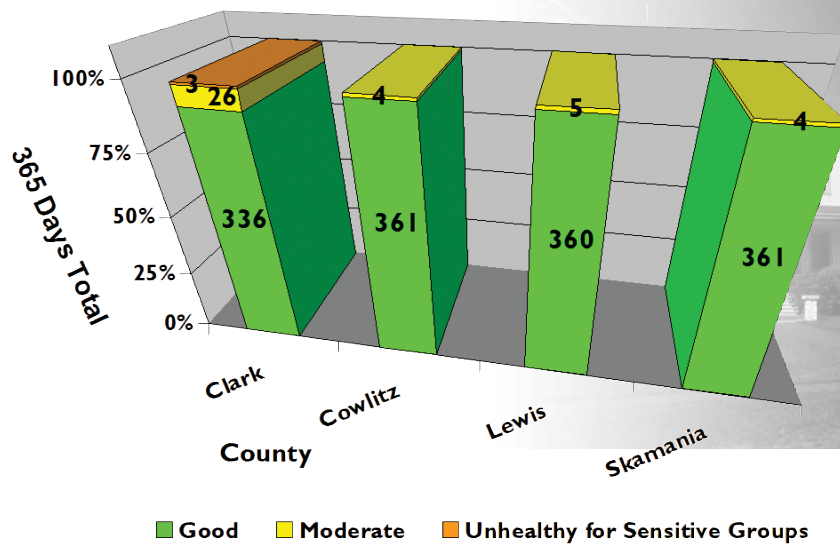
Puget Sound Clean Air Agency
<http://www.pscleanair.org>

Olympic Region Clean Air Agency
<http://www.orcaa.org>

Northwest Air Pollution Authority
<http://www.nwair.org>



2002 Air Quality*



*The 2002 Air Quality charts on pages 4 to 7 present an overview for counties reporting the Air Quality Index. More detailed air quality data are available from the state Department of Ecology at <http://www.ecy.wa.gov/programs/air/airhome.html> or at specific local air agency Web sites. See back page to learn more about the Air Quality Index.

Southwest Washington

This is one of the fastest growing regions in the state. Clark County now has nearly 400,000 residents. Another 1.3 million live across the Columbia River in metropolitan Portland. This makes urban smog and its main component, ozone, a real concern for air managers here. The area has not exceeded federal ozone standards since 1998 — but Southwest Clean Air Agency Director Bob Elliott attributes that to favorable weather conditions

during recent summers. “My feeling is we’ve been lucky,” says Elliott. Even with mild temperatures and regular breezes, the air agency still called seven Clean Air Action days last summer when smog was approaching unhealthy levels.

Air toxics are also a concern. Clark County’s truck fleet uses biodiesel, which is a fuel made from agricultural products and used cooking oil that reduces harmful diesel emissions. But ultra-low-sulfur diesel fuel, which also cuts harmful tailpipe pollution, is not yet available at a reasonable

cost for diesel fleets in the Vancouver-Portland area.

Visibility remains a challenge, particularly in the spectacular Columbia River Gorge National Scenic Area. The local air authority has a \$625,000 grant to study visibility problems in the gorge.

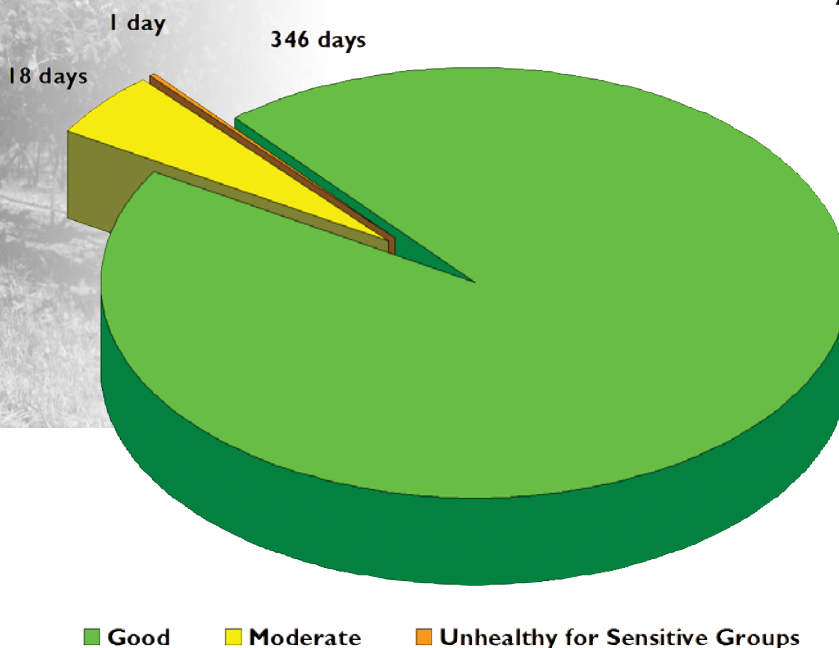
Up closer to Mount Rainier is the region’s most recent success story. The owners of the state’s only coal-fired plant in Centralia have installed new pollution-control equipment that will reduce the output of sulfur dioxide by 70,000 tons a year.

For more information

Southwest Clean Air Agency
<http://www.swcleanair.org/>



2002 Air Quality* Benton County



Southeast Washington

In the agricultural area around Tri-Cities, dust remains the biggest single air quality problem. Blowing dust can be harmful to human health because, just like smoke, the particles can lodge in the lungs.

The Benton Clean Air Authority has recorded 30 exceedances of the federal standard for particulate pollution since 1987, the most recent in the winter of 2003. To put this in perspective, the air managers here believe blowing dust accounts for 100 times more pollution than all the area's industrial sources combined.

A protracted drought in the region would make dust a continued challenge. The good news is that visibility and particulate levels in late summer and early fall have improved, thanks to vigorous controls of agricultural burning.

Particulate pollution has also historically been a problem farther west, in the Yakima Valley. The major sources are wood stoves, agricultural burning and road dust, which vary by the time of year. Since the early nineties, Yakima has seen particulate levels drop to the point where the area now meets federal particulate standards. Wood stoves are cleaner than they used to be, and people are using them more responsibly.

The Yakima area has also seen dramatic improvement in carbon monoxide levels thanks to cleaner cars and programs such as one that staggers stoplights to prevent unnecessary idling.

Air managers in both Tri-Cities and Yakima say they are concerned about air toxics but concede they have no monitoring equipment to

Air Quality Index data are not available for Adams, Franklin, Kittitas, Klickitat, Walla Walla, Whitman or Yakima.

learn more about the problem. Benton Clean Air Authority's David Lauer says, "We have no idea what people are being exposed to and we have no way of finding out."

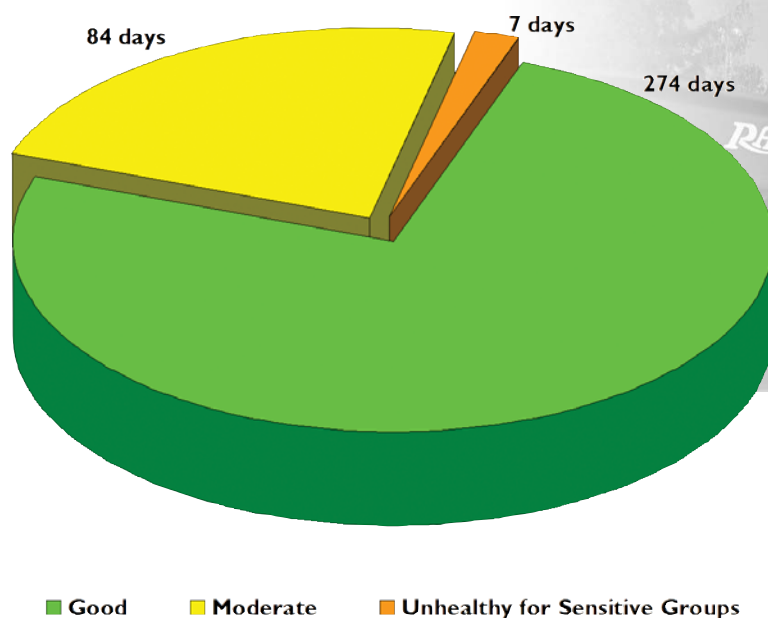
For more information

Benton Clean Air Authority
<http://www.bcaa.net/>

Yakima County Clear Air Authority
<http://www.co.yakima.wa.us/cleanair/default.htm>

Elsewhere in southeast Washington:
Washington State Department of Ecology
<http://www.ecy.wa.gov/programs/air/airhome.html>

2002 Air Quality* Spokane County



Air Quality Index data are not available for Chelan and Stevens counties.

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Northeast Washington

Spokane in the past had some significant air quality problems, especially in the winter. The local topography forms a perfect basin to trap pollutants.

The area has seen major improvement since the early nineties. Spokane now meets federal standards for coarse particles (or particulate matter less than 10 microns in diameter) and carbon monoxide.

State and national efforts are partially responsible for this improvement. Cars and wood stoves are both cleaner than they used to be.

Innovative local initiatives have also made a difference. Paving roads and using new sanding techniques in the winter have helped keep dust particles out of the air. A public/private partnership to help low-income residents pay for vehicle emission-system repairs has reduced tailpipe pollution by an estimated 72 tons. Agricultural field burning in Spokane County has dropped from 25,000 acres in 1997 to 25 acres in 2002.

Challenges remain. As the area grows, the increase in cars has

local air managers concerned about ozone levels in the summer. The area still has a number of days when fine-particle pollution is high enough to affect sensitive groups. Ultra-low sulfur fuel, which reduces pollution from diesel engines, is not available yet in the Spokane area. Smoke from field burning in Idaho still drifts across the border into Washington.

For more information

Spokane County:
Spokane County Air Pollution Control Authority (SCAPCA)
<http://www.scapca.org>

Elsewhere in northeast Washington:
Washington State Department of Ecology
<http://www.ecy.wa.gov/programs/air/airhome.html>

Air Pollution and Human Health

The science is clear. Air pollution has a direct negative effect on human health. However, all people do not suffer equally when the air gets bad. The young, the elderly and those suffering from respiratory ailments suffer first when air quality declines. It happens more than most of us might think. Even with all the improvements in pollution controls, Puget Sound had ten days last year when the air was unhealthy for sensitive individuals. Spokane had seven.

Asthma

Asthma is reaching epidemic proportions in Washington. More than half a million Washington residents have been diagnosed with asthma, including one out of every 10 children in the state. We

don't know exactly what causes this inflammation of the bronchial tubes, but we do know that air pollution can trigger an attack. Studies in Washington documented an increase in emergency room visits for asthma when particulate-pollution levels rose. As important, those visits occurred when particulate levels were way below federal health standards. Another study linked decreased lung function in children to times when winter wood-burning spewed particulates into the air.

Indoor Air

People spend 90 percent of their time inside. Many Washington residents continue to find the air inside their homes is less healthy than the air outside. Secondhand smoke, dust mites, mold spores, dust from outside and pet dander all can cause respiratory irritation. One positive trend is that more and more builders in the state are



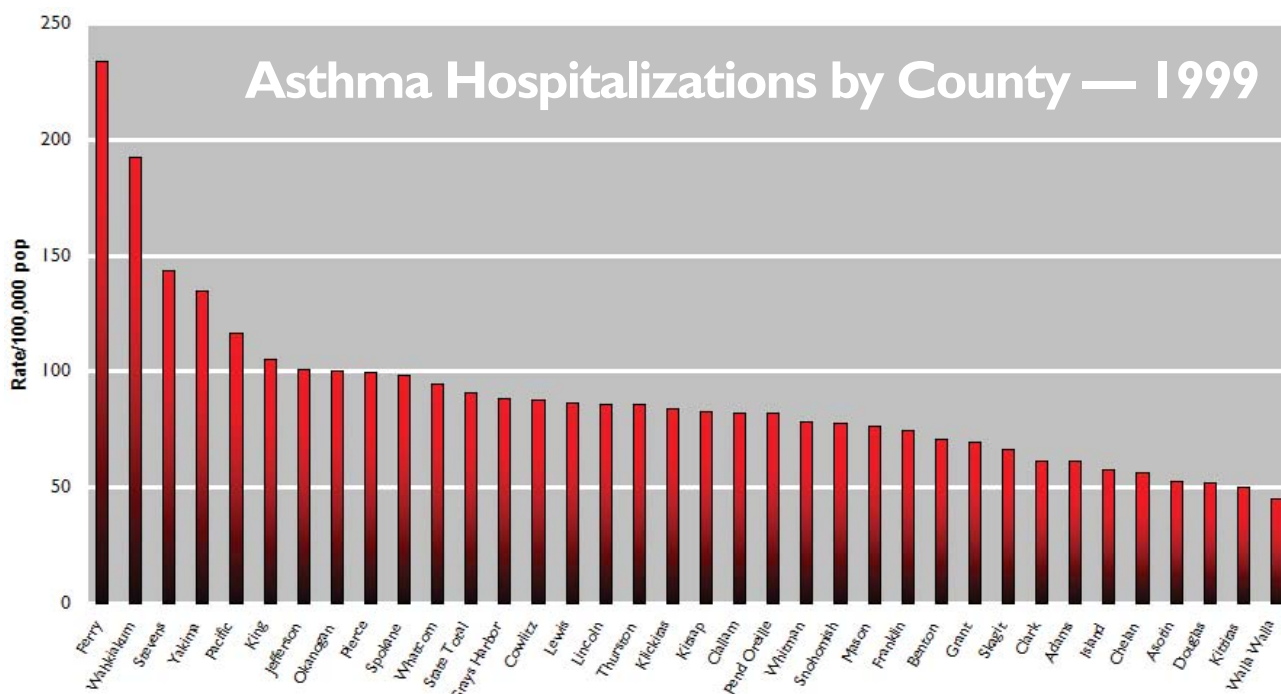
Two campers learn how to manage their asthma at Asthma Camp (1-800-LUNG USA).

taking indoor air quality into account when designing and constructing homes.

For more information

American Lung Association of Washington
<http://www.alaw.org/>

Northwest Center for Particulate Air Pollution and Health
<http://depts.washington.edu/pmcenter/>





What we are doing

The American Lung Association of Washington is working to protect the air by:

- Providing air quality forecasts through our Breathe Easy Network so people can take actions to reduce their exposure to pollution and reduce pollution levels by driving less or not burning (visit www.alaw.org for more information).
- Advocating for stronger air quality regulations in Olympia. The state should establish a more stringent burn ban regulation to better protect human health. The state should also require diesel engines to be retrofitted and use ultra-low sulfur fuel. School buses should be the priority.
- Advocating the continuation of a strong Vehicle Emission Check program. The program applies to gasoline and diesel vehicles from five to 25 years old in the Everett-Seattle-Tacoma, Spokane and Vancouver areas. Keeping the dirtiest vehicles off the road keeps thousands of tons of dangerous pollution out of the air in the state's urban areas.
- Training builders, homeowners, residents and general contractors to use healthy building practices.
- Working to ban smoking in all of Washington's workplaces, including bars, taverns, bowling alleys and skating rinks.



In the Seattle area alone, the Vehicle Emissions Check program in 2002 kept 380 tons of toxic benzene out of the air — the equivalent of 8.45 million new vehicles.

What you can do

May is Clean Air Month — a good time for each of us to do our part to clean up the air:

- Visit www.airwatchnorthwest.org to check air quality forecasts, or watch for them in the local media.
- Elect to do one thing to reduce pollution levels — such as driving less or not burning wood, forest or yard debris.
- Choose not to burn wood and convert your fireplace to natural gas or propane (visit Puget Sound Energy at www.pse.com for information).
- Join Flexcar (www.flexcar.com), the largest car-sharing program now available in the Seattle, Kitsap County and Vancouver areas.
- Never burn garbage, plastic, foil or holiday wrapping paper. It's illegal and even more toxic than burning wood.
- Buy fuel-efficient cars or commute by carpool, vanpool or mass transit.
- Bike to work. Call Cascade Bicycle Club (206-522-3222) for more information.
- Don't let your engine idle more than 30 seconds.
- Use manual or electric lawn mowers and other yard equipment.
- Talk to your local school board or superintendent about cleaning up harmful diesel soot from school buses by using cleaner fuels and new emission-control retrofits.
- Join the American Lung Association of Washington's Breathe Easy Network for air pollution forecasts or the Legislative Network to allow your voice to be heard in Olympia. Visit www.alaw.org or call 1-800-LUNG USA.

What is the Air Quality Index?

The Air Quality Index, or AQI, shows air quality in terms of how healthy the air is for most people to breathe. People can use the information to make changes that reduce pollution, such as burning less or driving less, and they can plan activities to minimize exposure to unhealthy levels of air pollution. This is especially important for people who are sensitive to air pollution, including young children, people with asthma and other lung diseases, and the elderly, as well as those who exercise outdoors.

The AQI is reported by the media and on local and state Web sites. For the AQI by county, visit <http://airr.ecy.wa.gov/Public/databyarea.shtml>.

How the AQI is calculated: data is gathered from networks of air monitors that measure major pollutants and then converted into AQI values, based on formulas developed by the U.S.



Environmental Protection Agency. The highest of the values for individual pollutants becomes the AQI value for that day.

For more information

U.S. Environmental Protection Agency
www.epa.gov/airnow/aqibroch/

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